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| 10/554,302 | 05/25/2006 | Roland Heckenthaler | 02894-729US1 06721-PT22 | 4464 |
| 26161 7590 06/10/2009 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 | | | EXAMINER HINZE, LEO T | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/554,302 | Applicant(s) HECKENTHALER ET AL. | |
| | Examiner LEO T. HINZE | Art Unit 2854 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,7-14,16,17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,7-14,16,17 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 26 March 2009, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection as discussed below.

a. Applicant argues on pp. 6-7 that Leyland, Horton, Maunder, and Hall fail to teach sensing texture of the surface to be printed. This argument appears to be moot, as sensing a texture does not appear to be claimed in the newly amended claims.

Claim Objections

2. Claim 9 is objected to because of the following informalities: claim 9 depends from canceled claim 3. It appears that claim 9 should depend from claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Based on Applicant's arguments, it appears that Applicant's position is that a pyrometer is incapable of sensing the characteristics of color, roughness, or material type. However, claim 9 recites that the sensor used to sense these characteristics is a pyrometer. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 7, 8, 10-14 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leyland et al., US 4,893,555 A (hereinafter Leyland) in view of Horton, US 3,817,172 A (hereinafter Horton) and Maunder, US 2,887,051 A (hereinafter Maunder).

a. Regarding claims 1, 14, and 21:

Leyland teaches a plastic surface printing method comprising: providing a metallic hot-stamping tool (16, Fig. 1) with a stamping surface using a heating device ("heated die 16," col. 2, l. 46), preheating a work piece surface (12, Fig. 1) to be printed

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(heat generated by the cartridge heater 44 is transferred to the peripheral surface of the plastics odometer wheels 12,” col. 3, ll. 48-50); and using the stamping surface to press a carrier foil (24, Fig. 1) against a surface of the work piece such that a pigment layer is transferred from the carrier foil onto the work piece (“the pigment on the printing tape 24 is transferred from the printing tape to the peripheral surface of the plastics odometer wheel to print the numbers thereon,” col. 3, ll. 20-22) wherein the work piece surface to be printed is preheated to a temperature between 30 °C and 60 °C; and wherein the stamping surface is preheated to a temperature of between 140 °C and 240 °C (“heated die 16 normally operates at temperatures in excess of 200 °C, and is usually set to operate at a temperature between 260 °C and 300 °C,” col. 1, ll. 53-56); determining a characteristic of the work piece surface, wherein the characteristic is selected from the group consisting of color, roughness, and material type (One having ordinary skill in the art would know that different materials have different melting points, and further, that when hot stamping a material, that the temperature of the work piece and stamping surface must be tailored to each material being stamped, to avoid overheating the material and causing it to melt, and to avoid underheating the material, which may result in poor printing quality. Therefore, one having ordinary skill in the art would know that one must discern among the types of materials being hot stamped by differentiating by such things as color, roughness, and material type, so that one may adjust the heating power and temperature as required based on the material type being printed.); and using data indicative of the sensed characteristic in an evaluation device (the user) that subsequently adjusts a heating power of the heating device based, at least in part, on

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the characteristic data (the user would inherently adjust the stamping machine to suit the material being stamped).

Leyland does not teach a metallic hot-stamping tool with a plastic-coated outer stamping surface, or wherein the work piece surface to be printed is preheated to a temperature between 80 °C and 120 °C; wherein preheating sensing uses a sensor.

Horton teaches a metallic hot-stamping tool with a plastic-coated outer stamping surface (2, 1; “the flexible resilient die portion is preferably formed of a high-temperature resistant silicone rubber material,” col. 1, ll. 45-47). The rubber surface allows the die to conform to the surface to be printed (col. 1, ll. 19-25).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Leyland to include a plastic-coated outer stamping surface as taught by Horton, because this would allow the die to conform to the surface of the article to be printed.

Maunder teaches the hot stamping of an object (col. 1, ll. 19-22), wherein the object is heated to between 100 °C and 130 °C (col. 2, ll. 48-49).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Leyland wherein the work piece surface to be printed is preheated to a temperature between 80 °C and 120 °C, because Maunder teaches that it is known to heat work pieces to these temperatures, and heating work pieces to such temperatures would predictably provide the preheating necessary to effect a successful transfer of printed material to the work piece.

It has been held that mere automation of a manual activity is not sufficient to patentably distinguish an invention over the prior art. See MPEP § 2144.04 (III).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Leyland wherein the preheating sensing of the material to be stamped uses a sensor, because this appears to be mere automation of a manual process, and one having skill in the art would recognize that automating the material characteristic sensing stage would predictably increase the efficiency of the printing method.

b. Regarding claims 7 and 8:

The combination of Leyland, Horton, and Maunder teaches the method according to claim 1 as discussed in the rejection of claim 1 above. The combination of Leyland, Horton, and Maunder also teaches wherein work piece is “any suitable plastics material” (col. 4, l. 38).

The combination of Leyland, Horton, and Maunder does not teach wherein the preheated work piece surface comprises a surface of a plastic toothbrush.

One having ordinary skill in the art would be familiar with various dental hygiene instruments, including toothbrushes, which are commonly made from plastics materials.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Leyland wherein the plastics material of the work piece was in the form of a toothbrush made from a thermoplastic plastic, because one having ordinary skill in the art would recognize that a toothbrush is a plastics material suitable for use in the method taught by the combination of Leyland and Horton.

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c. Regarding claim 10, the combination of Leyland, Horton, and Maunder teaches the method according to claim 1 as discussed in the rejection of claim 1 above. The combination of Leyland, Horton, and Maunder also teaches wherein the hot-stamping tool is coated with a silicon layer (Horton: “the flexible resilient die portion is preferably formed of a high-temperature resistant silicone rubber material,” col. 1, ll. 45-47).

d. Regarding claims 11, 12, and 19, the combination of Leyland, Horton, and Maunder teaches the method according to claims 10 and 14 as discussed in the rejection of claims 10 and 14 above. The combination of Leyland, Horton, and Maunder also teaches wherein the silicone layer has a thickness between 2 and 3 mm (Horton: “the die is 0.75 to 3 mm thick,” col. 4, l. 25).

e. Regarding claims 13 and 20, the combination of Leyland, Horton, and Maunder teaches the method according to claims 1 and 14 as discussed in the rejection of claims 1 and 14 above. The combination of Leyland, Horton, and Maunder also teaches wherein the stamping surface is preheated to a temperature between 200 °C and 220 °C (Leyland: “heated die 16 normally operates at temperatures in excess of 200 °C, and is usually set to operate at a temperature between 260 °C and 300 °C,” col. 1, ll. 53-56).

7. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leyland in view of Horton and Maunder as applied to claims 1 and 14 above, and further in view of Hall, US 2,763,893 A (hereinafter Hall).

a. Regarding claim 9:

The combination of Leyland, Horton, and Maunder teaches the method according to claim 1 as discussed in the rejection of claim 1 above.

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The combination of Leyland, Horton, and Maunder does not teach wherein the texture is sensed by a pyrometer (Hall: pyrometer 34, col. 4, l. 16).

Hall teaches sensing the temperature of a piece to be embossed/stamped with a pyrometer, and controlling the temperature of the work piece based on the sensed temperature (col. 4, ll. 16-30).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to further modify Leyland wherein the texture is sensed with a pyrometer, because one having ordinary skill in the art could easily combine the known prior art techniques to provide the method of Leyland with sensing and control of the work piece temperature, as taught by Hall, thereby allowing precise temperature control of the work piece which may enhance the results and speed of the process.

b. Regarding 16:

The combination of Leyland, Horton, and Maunder teaches the method according to claim 14 as discussed in the rejection of claim 14 above.

The combination of Leyland, Horton, and Maunder does not teach wherein adapting the heating power comprises: sensing the temperature and texture of the surface to be printed by means of a sensor that comprises a pyrometer; and forwarding data indicative of the sensed texture to an evaluation device that subsequently adjusts the heating power of the heating device

Hall teaches sensing the temperature of a piece to be embossed/stamped with a pyrometer, and controlling the temperature of the work piece based on the sensed temperature (col. 4, ll. 16-30).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to further modify Leyland wherein the texture is sensed with a pyrometer, because one having ordinary skill in the art could easily combine the known prior art techniques to provide the method of Leyland with sensing and control of the work piece temperature, as taught by Hall, thereby allowing precise temperature control of the work piece which may enhance the results and speed of the process.

8. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leyland in view of Horton and Maunder as applied to claims 1 and 14 above, and further in view of Colledge, US 3,791,290 A (hereinafter Colledge).

a. Regarding claims 4 and 17:

The combination of Leyland, Horton, and Maunder teaches the method according to claims 1 and 14 as discussed in the rejection of claims 1 and 14 above. The combination of Leyland, Horton, and Maunder also teaches wherein the work piece heater is a cartridge heater (Leyland: 44, Fig. 3).

The combination of Leyland, Horton, and Maunder does not teach wherein preheating the work piece surface is heated by means of an infrared lamp or a fan heater.

Colledge teaches a heating means for a work piece that is either an electric resistance coil or an infra-red lamp (col. 1, ll. 33-34).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to further modify Leyland to substitute an infrared heater for the electric heater, because Colledge teaches that these are known equivalents, and one

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having ordinary skill in the art may find more flexibility in using an IR heater that does not need to touch the work piece to heat it.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo T. Hinze whose telephone number is 571.272.2864. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571.272.2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leo T. Hinze
Patent Examiner
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02 June 2009

/Judy Nguyen/
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